



# Common Logistics Operating Environment (CLOE)

**Briefing for LIIW**

**Date: 23 June 2004**



# Common Logistics Operating Environment

**Vision:** “Develop a technology-enabled force equipped with self-diagnosing equipment platforms that interact with a networked sustainment infrastructure to support condition-based maintenance and anticipatory logistics to accelerate implementation of Future Force logistics processes.”



## Platforms

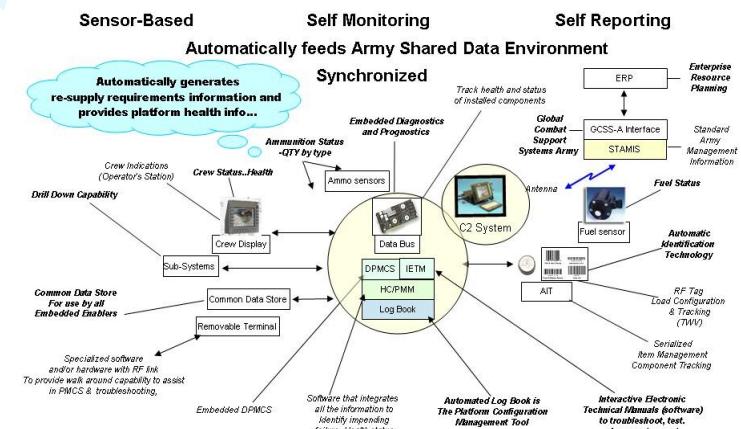


## Aviation

**Focus is Logistics  
Data and  
Processes From  
Tactical Through  
The National Level**

## Soldier

## Ground

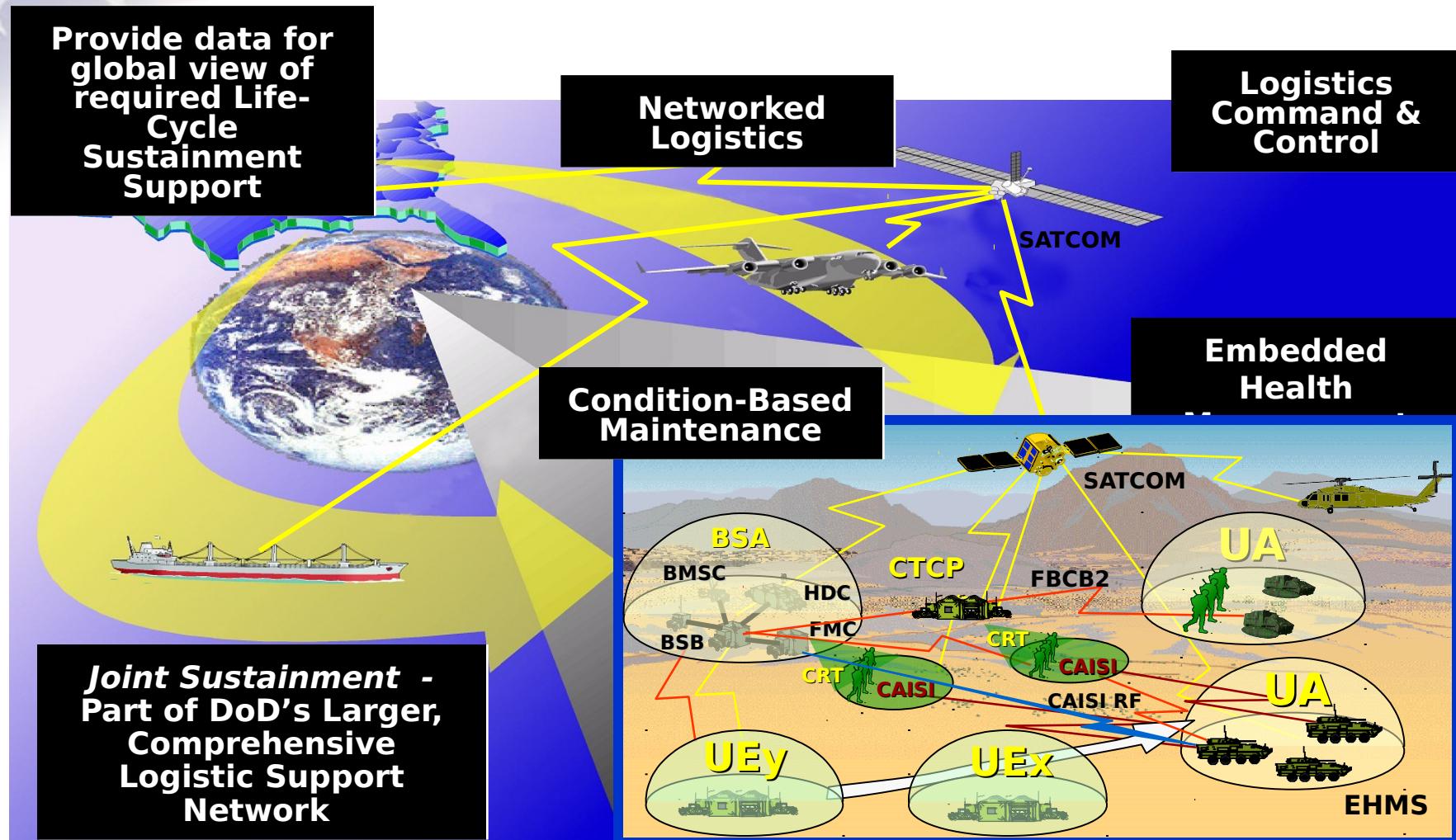


## Platform Enablers

Source: CLOE Concept Paper & Strategy 20 Feb



# What is CLOE?



Source: CLOE CONOPS



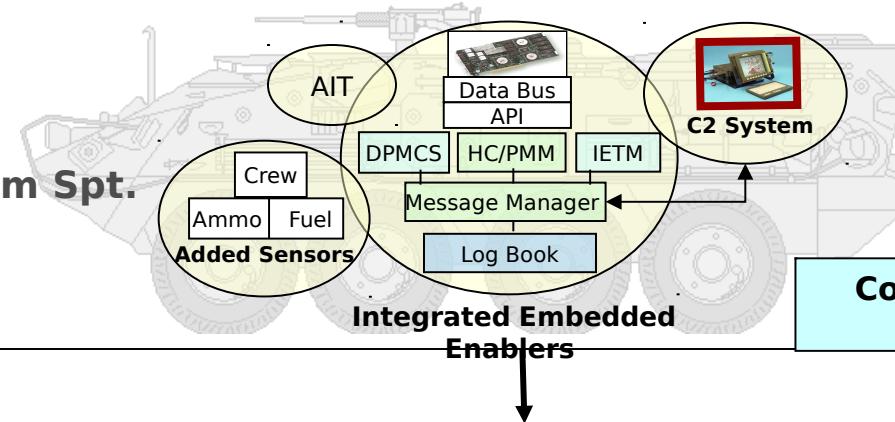
# CLOE Focus Areas

Soldier

Embedded Health Management

Platform

- Crew Health
- Supplies
- Soldier System Spt.



- Monitors
- Detects
- Anticipates
- Reports

Commonality, Standards, Specs, and Protocols

Logistics Situational Awareness and Understanding

Combat Status and Mission Planning

Decision Support & Distributed Logistics



Off-Platform  
Architecture

Platform/Soldier Data Requirements

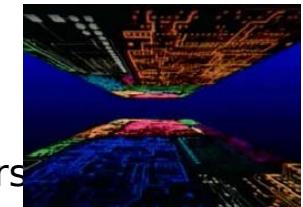
Above BDE

- ERP
- LCOP
- BCS3
- National Level

BDE & Below

- Commanders & SPO
- GCSS-A/T
- Current STAMIS
- Logisticians & Maintainers

Network Enabled





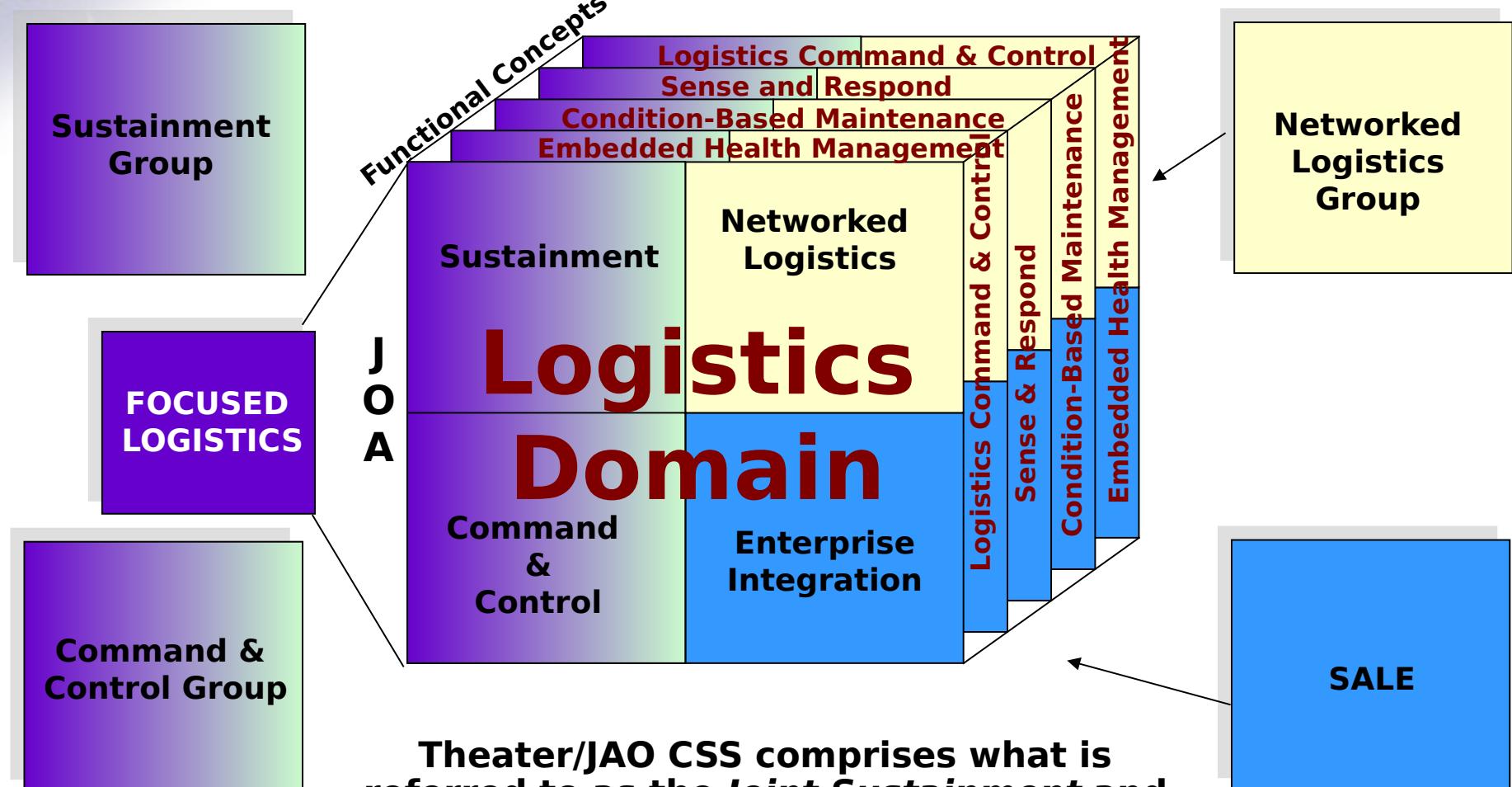
## CLOE Program Functional Areas

- Five Highly Interrelated and Interactive Areas:
  - Embedded Health Management
  - Condition-Based Maintenance
  - Anticipatory Logistics
  - Command and Control C2 (Warfighter)
  - Logistics C3 Command, Control, & Computers
- Requires Interoperability with other Logistics and Command Information Systems
- *Requires Integration with DoD Logistics Architect*



# CLOE Framework - Functional Areas

**No Redundancy or Overlap.**

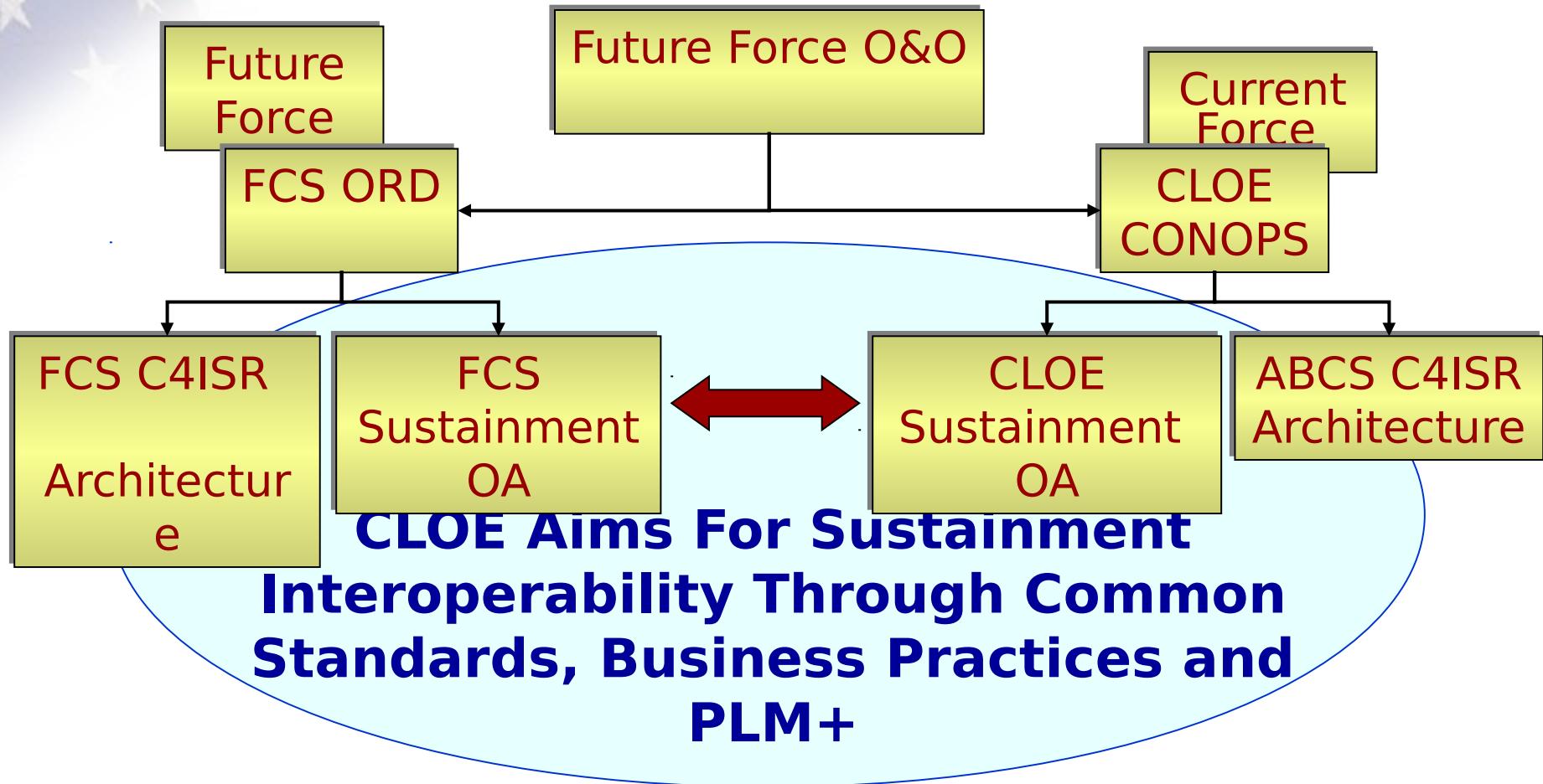


**Theater/JAO CSS comprises what is referred to as the *Joint Sustainment* and part of DoD's Larger, Comprehensive Logistic Support Network**

Source: CLOE CONOPS



# Sustainment Interoperability Between The Current Force & Future Force





# CLOE/FCS Collaboration Mechanisms

- **MOA**
  - Signed 28 May 04
- **IPT Participation**
  - Supportability
  - Log Products
- **Selected Design & Requirements Reviews**
  - PS-MRS
  - LDSS
- **SIL Integration**
- **SALE Modeling**
  - **CLOE OA, V1 (SBCT Ground) used as the basis for module for Army Tactical Maintenance Module**
- **ACE**
- **Ad Hoc Collaboration as required**



# Architecture - OA Purpose & Scope

- **Purpose:** Establishes the Anticipated Functional Information Exchanges required between Geographically-Separate Elements to Enable the Delivery of Logistic Services in Support of Deployed Operations (Joint/Combined) across the Full Range of Military Operations in a ***Theater/Joint Area of Operations***
- **Scope:** Mandatory Products
  - AV-1 Overview and Summary Information
  - OV-1 High-Level Operational Concept Description
  - OV-2 Operational Node Connectivity Description
  - OV-3 Operational Information Exchange Matrix
  - OV-5 Activity Model
  - OV-7 Logical Data Model
  - AV-2 Integrated Dictionary
- **Supporting Products**
  - OV-4 Organizational Relationships Charts
  - OV-6 (a, b, c) Operational Sequence & Timing Description



# OA Functional & Operational Areas

The Architecture v1.0 Addresses the Relationship between the TRADOC Functional Areas and the Stryker Brigade Combat Team (SBCT) Operational Areas

## Maintenance Functional Areas

Preventive Maintenance Checks and Services

Recovery/Retrograde Disabled Equip.

Diagnose Equipment Faults

Replace Components

Repair and Return Equip.

to User

## Operational Areas

- Platform

- CRT

- CTCP

- FMC

- BSB TOC

- HDC (Supply & Transportation)

- BSMC

## Logistics Functional Areas

Supply

Class III, V, IX

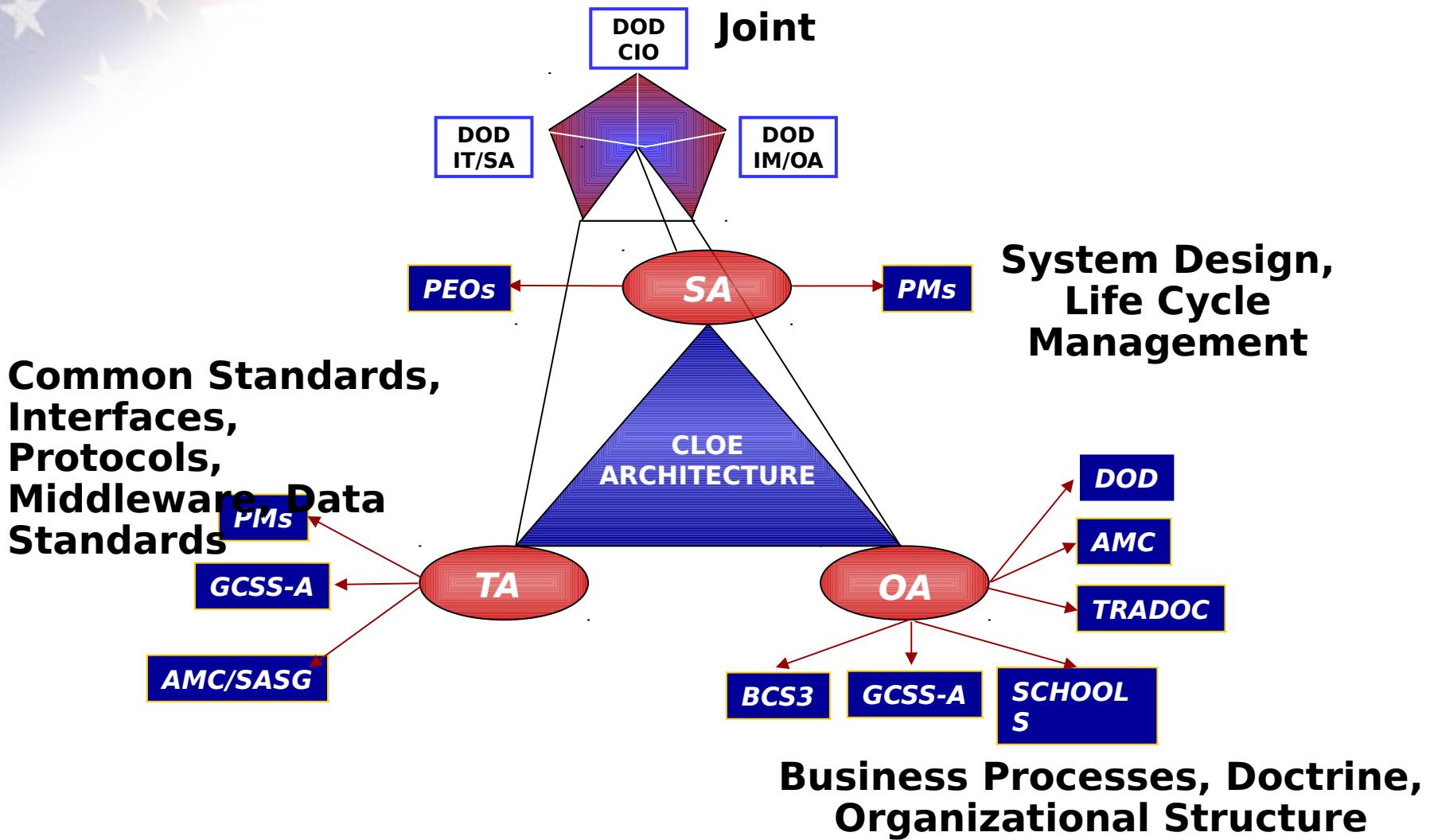
Transportation

Medical

Source: TRADOC Regulation 350-1

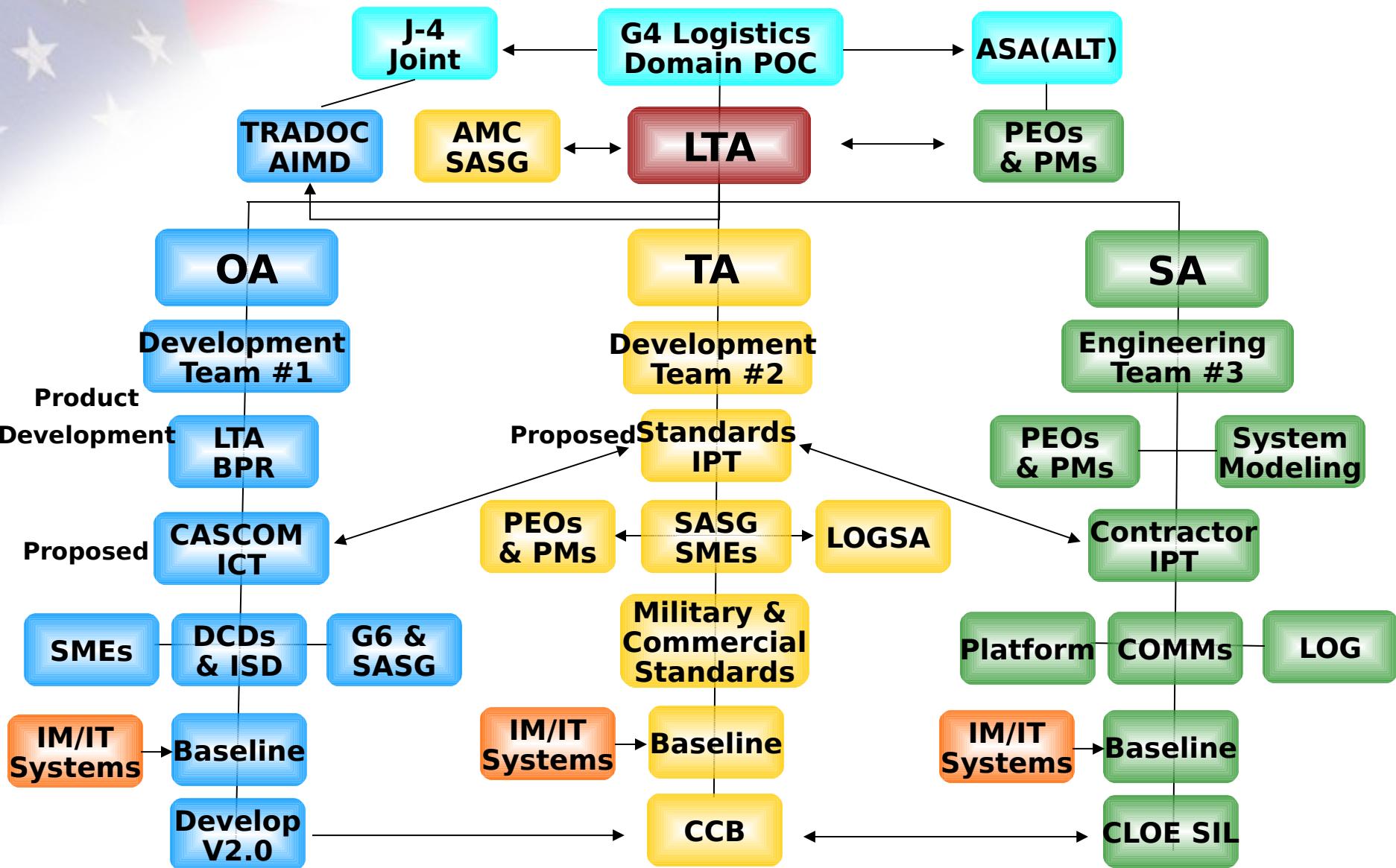


# Organizational Stakeholders





# Architecture Development Teams (Concept)



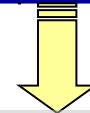


# Spiral Development

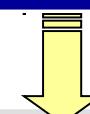
The CLOE Architecture is an Evolving Environment of Systems Integration and Interoperability

## STARTING POINT

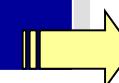
CLOE  
Architecture 1.0  
SBCT



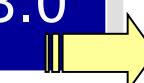
4<sup>th</sup> ID RESET  
v1.1



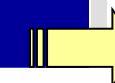
+Aviation  
V2.0



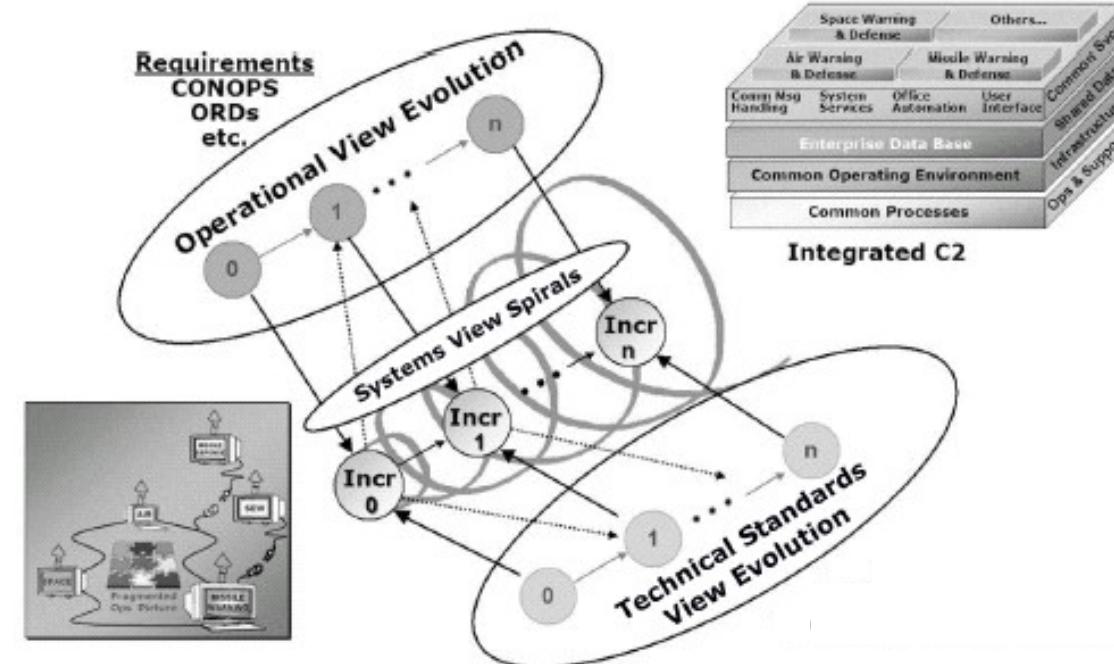
+Soldier  
Systems v3.0



+ Engineer  
& Watercraft  
V4.0

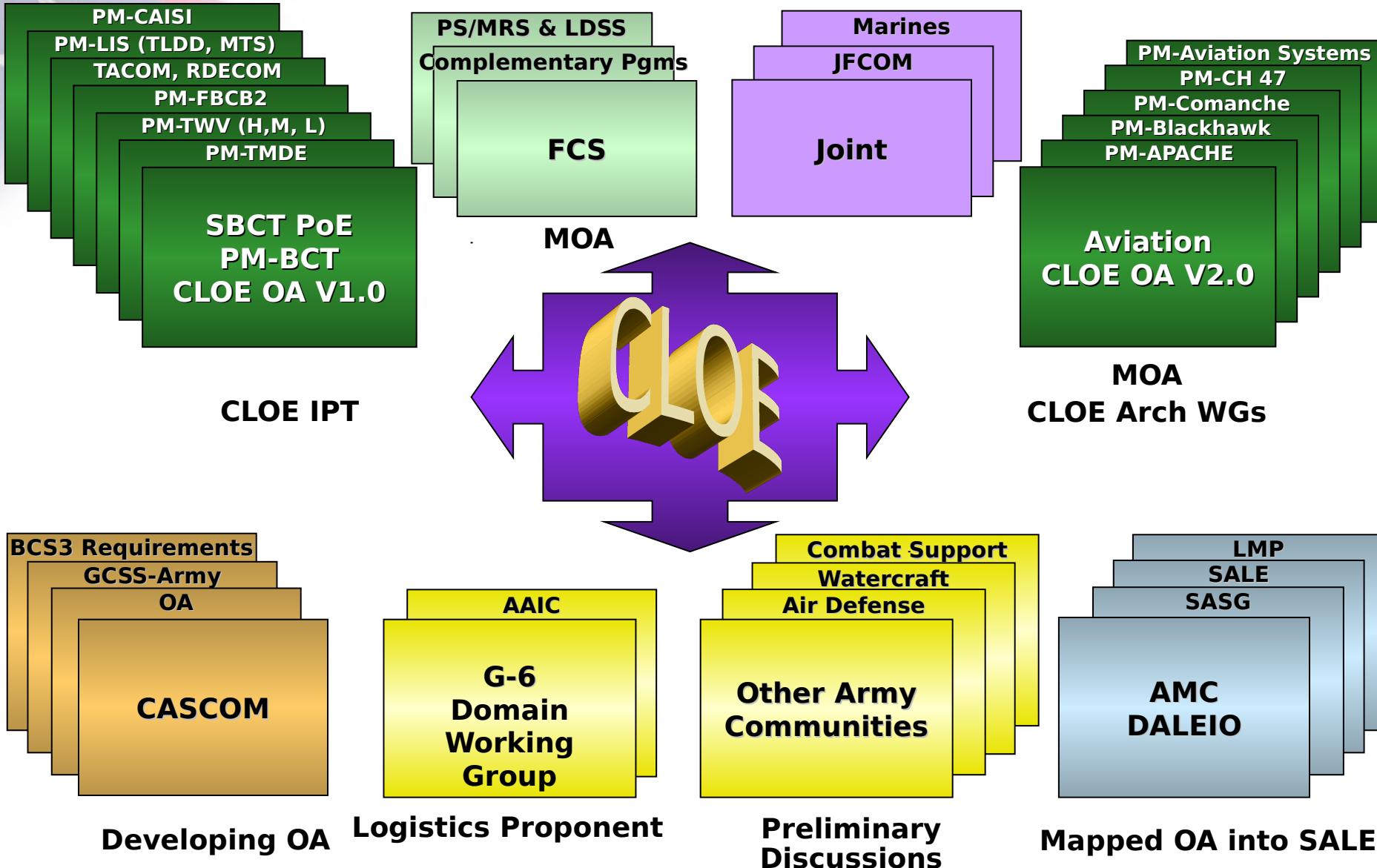


+FCS  
V5.0



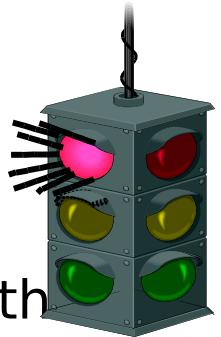


# CLOE Working Relationships





## Thoughts to take away



- CLOE Is A Collaborative, Living Process That Works With Major Army Agencies, Organizations and Programs
- The CLOE Architecture is an evolving environment of systems integration and interoperability
- CLOE Is The Only Initiative That Addresses Big Picture Sustainment Interoperability Among Current and Future Forces With Respect to Condition-Based Maintenance and Anticipatory Logistics

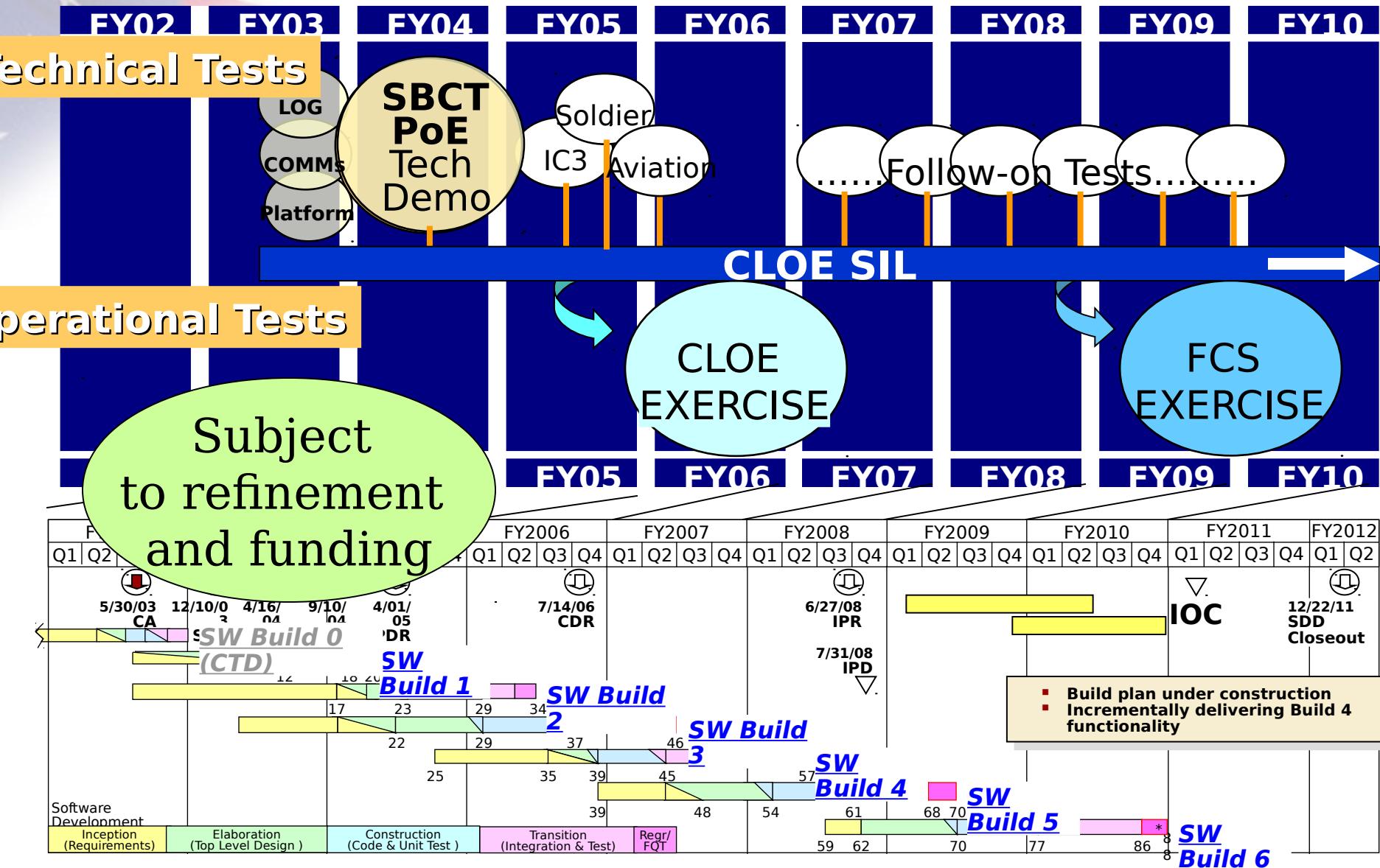
***"The line between disorder and order lies in logistics..."***  
***- Sun Tzu***



## **Backup Slides – Examples of OA, SA & TA**

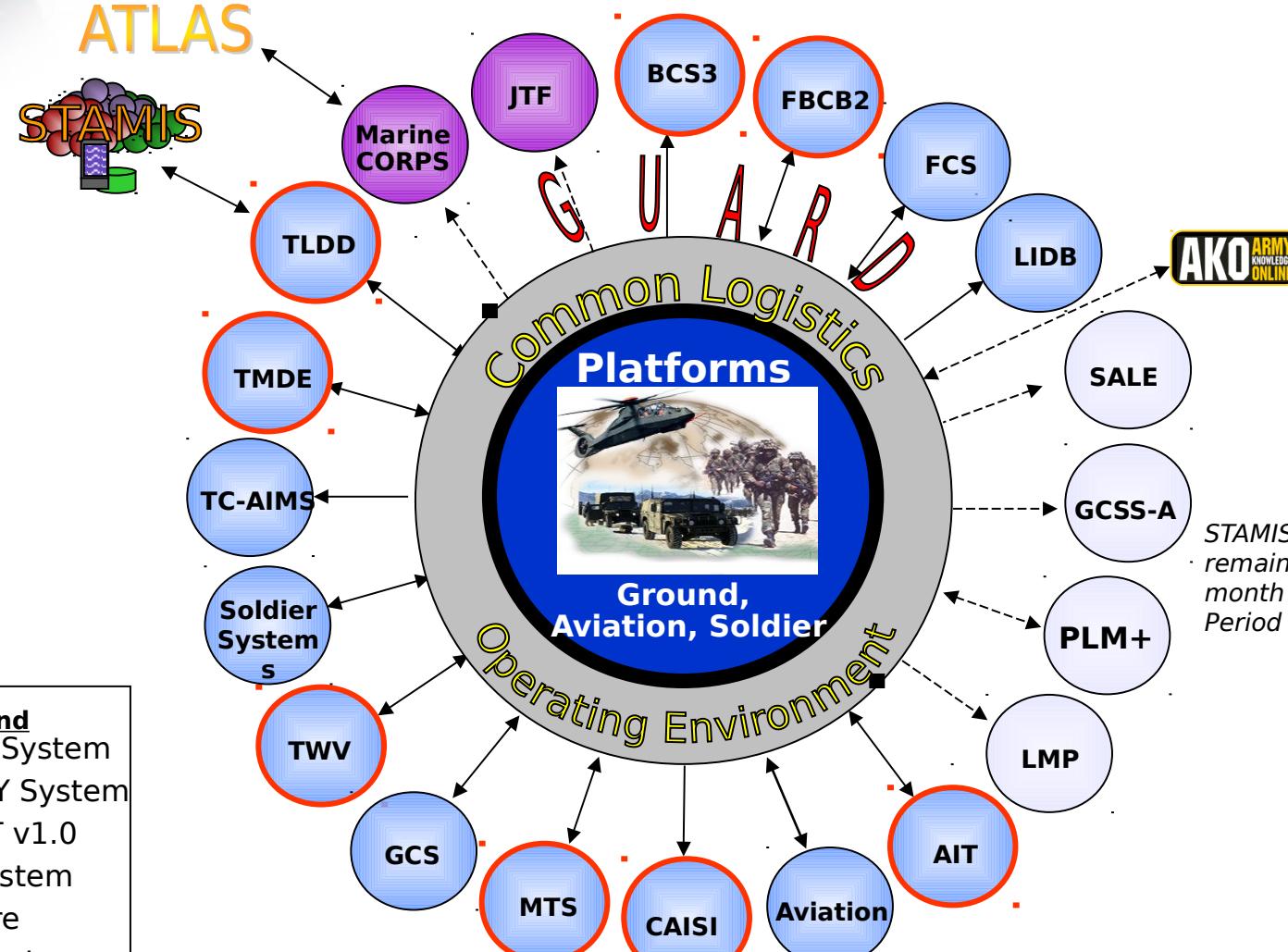


## Potential CLOE - FCS Schedule Integration





# CLOE Army System Interfaces (OV-2)

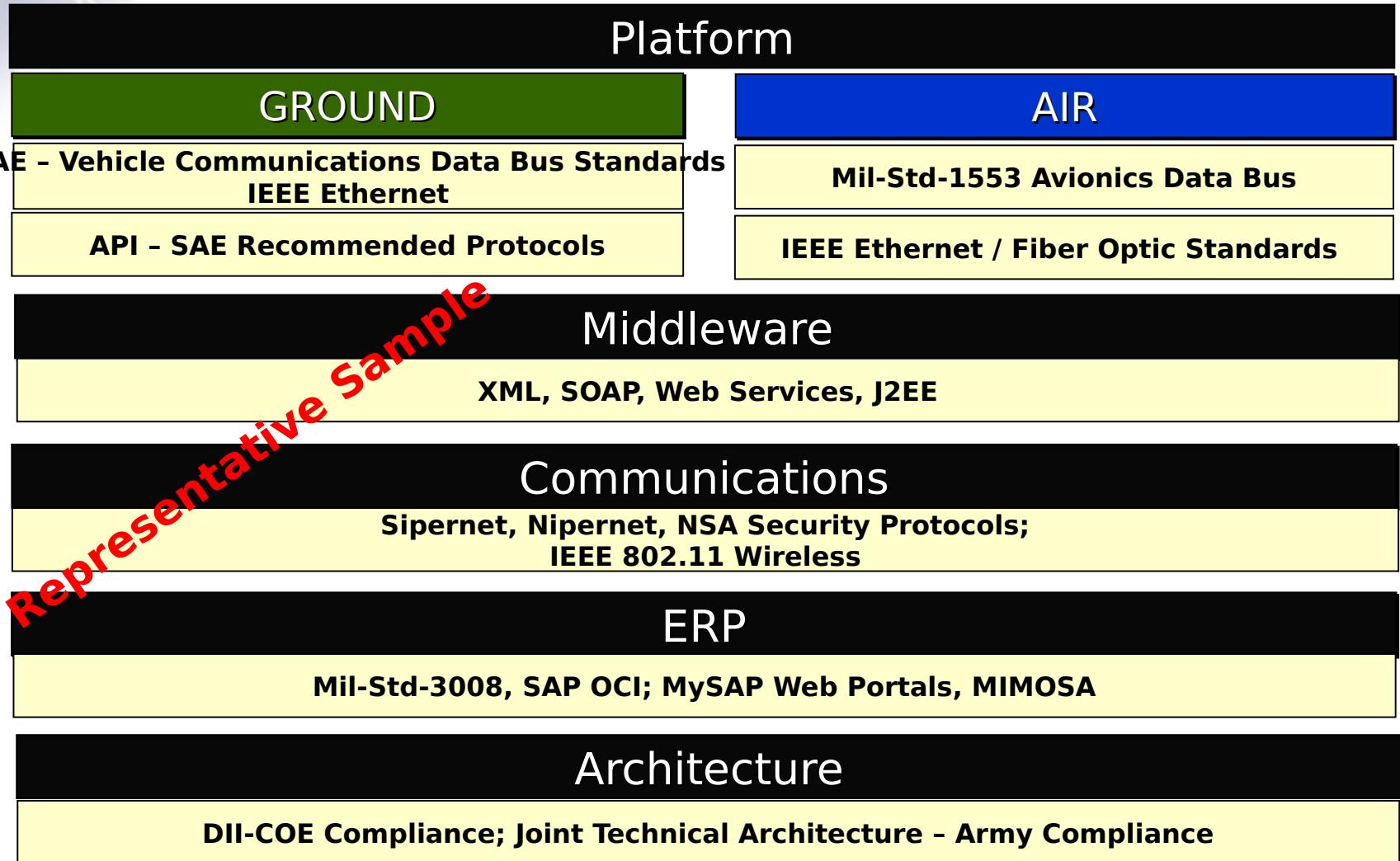


Source: Interface Identification & Description Working Group



# Technical Architecture

## *Commonality Provides for Interoperability*

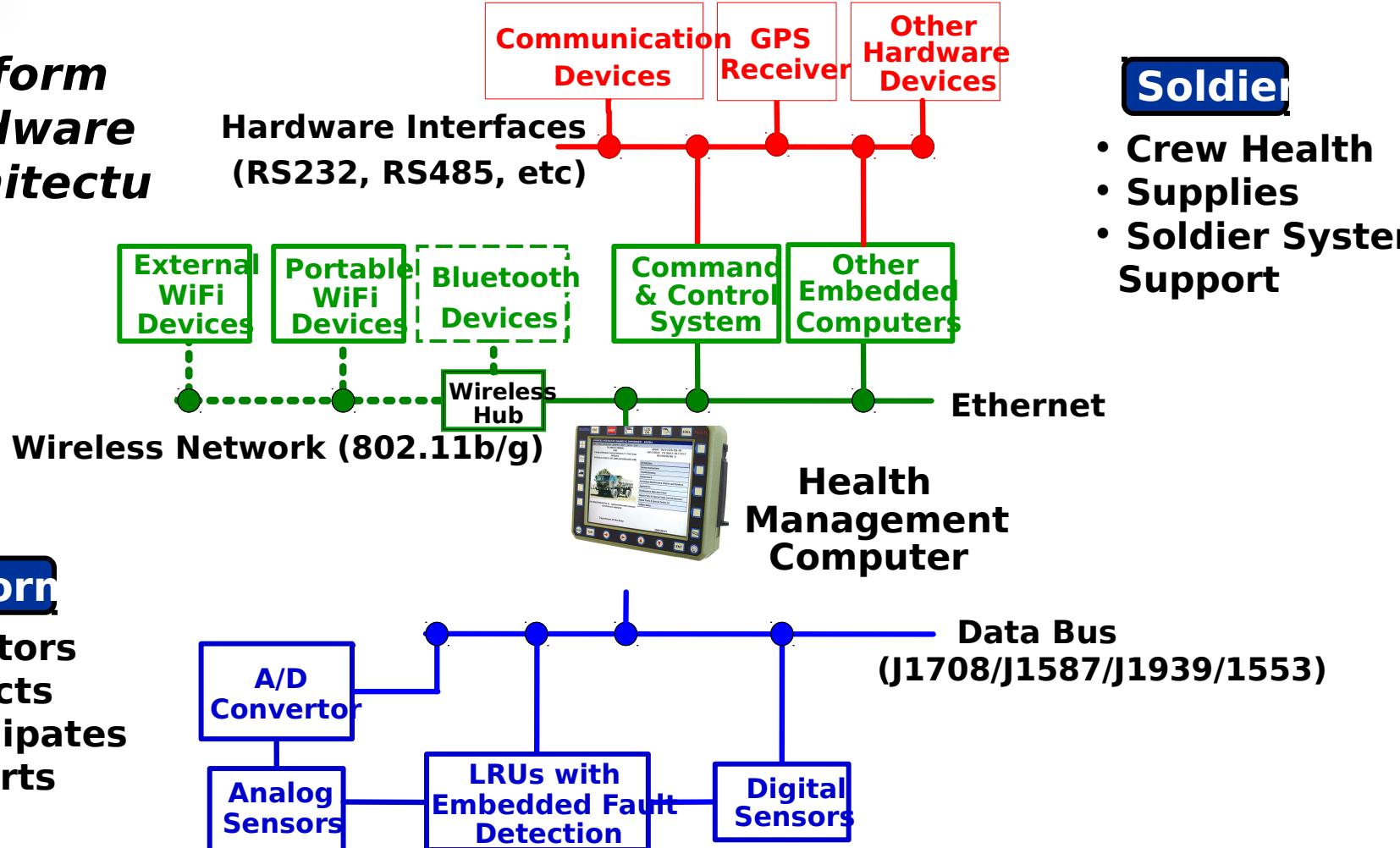




# System Architecture (SA)

## Sensor-Based and Linked

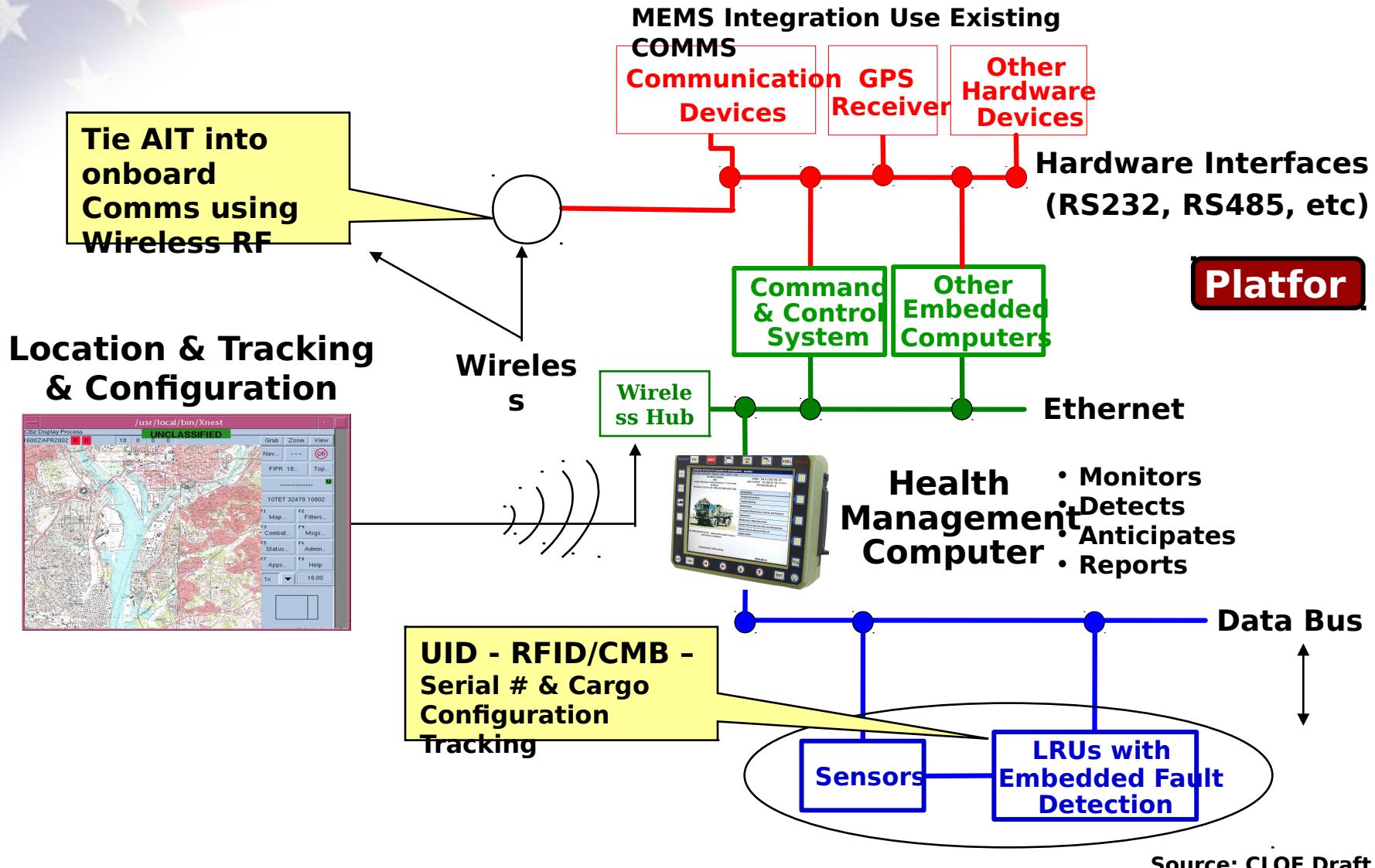
### Platform Hardware Architecture



Source: CLOE Draft SA v1.



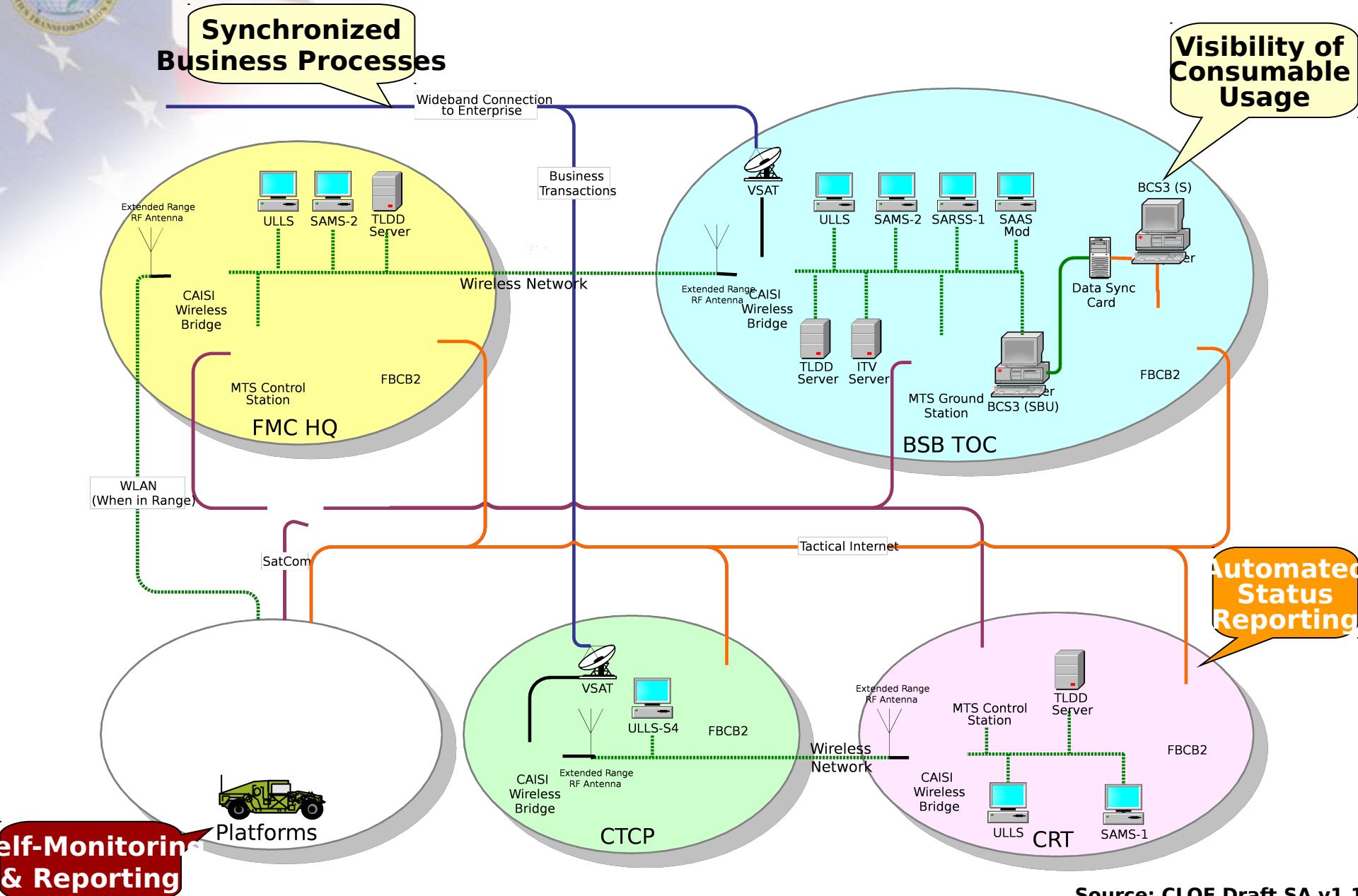
# AIT – UID Integration



Source: CLOE Draft SA v1.



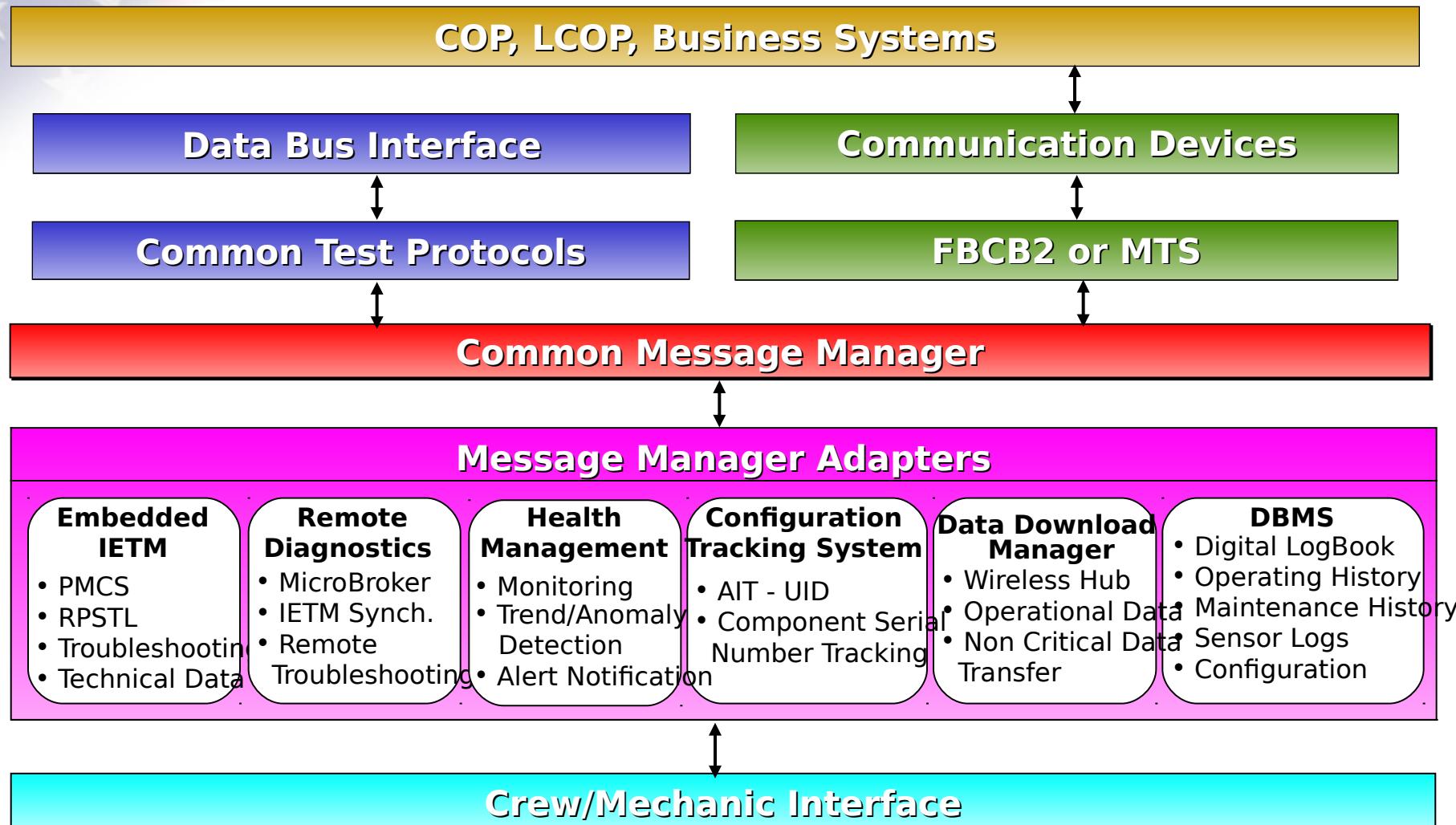
# Off-System Architecture



Source: CLOE Draft SA v1.1



# System Software Architecture



Source: CLOE Draft SA v1.1

UNCLASSIFIED

CB2 Display Process

1600ZAPR2002

R R

18 0 0 0 0

Grab Zoom View

Nav... --- Ctr

FIPR 0 Top...

U

10TET 32478 10802

F1 Map... F2 Filters...

F3 Combat... F4 Msgs...

F5 Status... F6 Admin...

F7 Apps... F8 Help

1x ▾ 16:00

# Representative Sample



	Minimum	Average	Time
Fuel	21%	30%	141600ZAPR2002
Ammo (HE)	70%CL	75%CL	141600ZAPR2002
Ammo (AP)	60%CL	73%CL	141600ZAPR2002
Equip Health	82%	88%	141600ZAPR2002
Crew Health			141600ZAPR2002
Food	62%	70%	140400ZAPR2002
Water	72%	78%	140400ZAPR2002

F A E P O

